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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,403	01/15/2004	Takehisa Hanada	247743US90	4961

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LANDRUM, EDWARD F

ART UNIT	PAPER NUMBER
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3724

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No.	Applicant(s)	
	10/757,403	HANADA, TAKEHISA	
	Examiner	Art Unit	
	Edward F. Landrum	3724	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because of the following informalities:

The use of legal phraseology within the abstract such as "substantially" and "thus." Editorial mistakes within the abstract such as "...blowing hot air onto the outline and the outline to generate..." Also please delete the term "Figure 2" from the end of the abstract. Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities:

In paragraph 35 the phrase "After the hot air blow on to all of the cutting lines CL is completed..." is used. Please modify the phrase to properly disclose the step taken on the glass. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

It is not clear how applicant's method causes the glass to break cleanly by thermal stress alone. For example, the patent of Dahlberg et al (U.S Patent No.

3,730,408) states (Col. 6, lines 10-18) that even with the application of hot air, a bending moment must still be applied. Dahlberg goes on to state (Col. 4, lines 18-36) that to avoid internal reflections within the glass a bending moment must be used to break it. In addition, the applicant states that the thermal stresses are optimized for breaking at 300 to 700 degrees Celsius. Dahlberg states the optimal temperature for use between 1.27mm and 2.54 mm lies between about 927 degrees Celsius and 1204 degrees Celsius (Col. 5, lines 4-15).

Clarification is required as to the difference in circumstances. Is the thickness or the chemical composition of the material critical? Is the period of heat exposure critical? Is the type of atmosphere in which the procedure is performed critical? Are there certain allowable dimensions for the glass piece as to not allow excess glass to break from the part before a cut is completed?

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross (U.S Patent No. 6,463,762) in view of Ferguson (U.S Patent No. 3,215,345) and Oelke (U.S Patent No. 3,587,956).

Regarding claims 1-6 Ross teaches a glass manufacturing apparatus consisting of a glass cutter (54) used to create an outline surrounding a part to be a glass bank,

and to create multiple vent lines connecting the outline of said glass bank to the edge of the plate glass (see Figures 4a and 4c). Said glass bank is the supported substantially horizontally by use of suction cups and pulled out of the plate glass.

Ross teaches all of the elements of the current invention as stated above except floating the cullet of the plate glass, and blowing hot air onto the outline of the glass bank to generate thermal stress on said plate glass along the scored lines previously made, thereby breaking said plate glass along the vent lines and the outline. Ross also fails to teach a temperature range for the hot air blown on the scored lines.

Regarding claims 1-6 Ferguson teaches a glass manufacturing apparatus that substantially horizontally supports the glass bank (10) by use of a suction system (88), and floating the cullet (70) so it can fall after cutting is completed and be taken away for reprocessing (see Figure 2).

Regarding claims 1-6 Oelke teaches thermally directed glass cutting using hot air to sever glass (Col. 3, lines 1-12). Dahlberg also teaches the optimal temperature range for $\frac{3}{4}$ in glass with a cutting time of 5-15 seconds to be 600 to 900 degrees Fahrenheit which is between 315 and 482 degrees Celsius (Col. 3, lines 13-17).

It would have been obvious to have modified Ross to incorporate the teachings of Ferguson and Oelke to create a glass manufacturing apparatus that provided for a means to dispose of glass cullet as well as sever the glass by use of hot air. Floating the cullet allows the cullet to be disposed of and available for reprocessing immediately after being cut from the glass plate. Using hot air to sever the plate glass would help eliminate internal reflections and other irregularities commonly found when using other

procedures. Hot air also eliminates the need for another manufacturing process in order to grind and polish the edges of a cut because edges produced by hot air cutting are straight, smooth, strong, and perpendicular to the surfaces of the glass.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

DeTorre (U.S Patent No. 3,756,482), Oelke et al (U.S Patent No. 4,190,184), and Okuhata et al (JP Patent No. 363002825) teach methods for thermally cutting glass material. Detorre (U.S Patent No. 4,487,350), and Ikola et al (U.S Patent No. 5,314,523) teach methods removing cullet from glass sheets. Boehm et al (U.S Patent No. 4,113,162) teaches the use of suction cups within the glass manufacturing process.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward F. Landrum whose telephone number is 571-272-5567. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan Shoap can be reached on 571-272-4514. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EFL
8/19/2005



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